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⑤ Clip for closing the folded end of a flexible bag.

⑤ A flat plastic clip (10) has a pressure tab (14) having opposed sharp pressure points (20) facing the thin, narrow pinching channels (18). The pressure points (20) are joined by curved hook portions (22) and partially form bag crease openings (24) that are offset inwardly from the pressure points (20). A large relief opening (16) is provided below the pressure tab (14) and joins pinching channels (18) adjacent the pressure points (20). The width (w) of the material of the body (12) between the outside end of the body and the pressure pinching channels (18) is of considerable width. The neck of the pressure tab which joins the pressure tab (14) to the body (12) is also of substantial width to provide rigidity to the clip (10) at the pinching channels (18) and apply a strong force resisting bending of the pressure tab (14) outwardly of the plane of the clip (10).

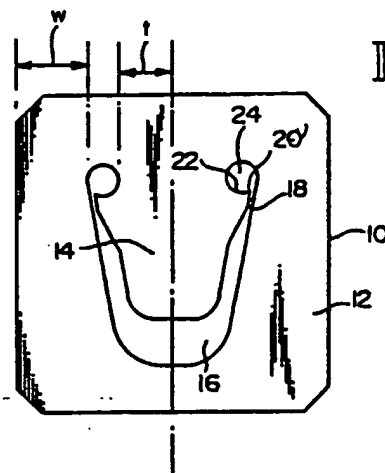


FIG. 5

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Technical Field

This invention pertains to bag-closing clips of the type that clasp over the folded end of a bag to hold the bag closed.

Background of the Invention

Heretofore, plastic bag-closing clips have generally fit around the twisted or gathered neck of a bag to hold the bag closed.

Other types of clips have held a smoothly joined or folded bag end by pinching the bag closed. Typical closures of these type are shown in U.S. Patent No. 2,533,539. Other closures for holding the folded end of a bag closed are in the shape of large clothespins using a spring clamping pressure for closing the bag.

These spring closing-type closures are expensive to manufacture and bulky.

Summary of the Invention

It is an object of this invention to provide a clip for closing the folded end of a bag which is inexpensive to manufacture.

It is another object of this invention to provide a plastic closure for closing the folded end of a bag by claspings the folded end of the bag at spaced sharp pressure points applied at narrow pinching channels to firmly grip the bag without inadvertently sliding off.

Basically, these objects are obtained by providing a clip having a flat plastic body with a central pressure tab. The pressure tab terminates at opposite ends in sharp pressure points that are adjacent narrow pinching channels. These pressure points press the folded end of the bag tightly against the opposed side of the channels while providing firm gripping pressure on the bag. Preferably, the areas above the pinching points are relieved as crease-receiving openings that are centrally offset inwardly from the pressure points. Also preferably, the pinching channels join an enlarged relief opening below the pressure tab for holding the bag material and allowing it to flow beneath the pressure tab without applying undue bending pressure on the pressure tab.

Using a clip of this configuration applies the sharp pressure points in narrow, confined pinching channels on opposite sides of the pressure tab. The relief openings then relieve pressure on the pressure tab so that the clamping pressure can be increased at the pressure points. This causes the folded end of the bag to make sharp turns at the pressure points so that the pressure points engage the material almost perpendicularly to the surface of the material. This applies a tight gripping pres-

sure, making the bag folded end less likely to slide free of the clip.

The clip can be provided with a single pressure tab or, preferably, will be provided with multiple pressure tabs to increase the number of pressure points engaging the material of the folded end of the bag. There can be opposed pressure points at each pinching channel.

Brief Description of the Drawings

Figure 1 is a front elevation of a clip for closing the folded end of a bag.

Figure 2 is a section of the clip taken along the line 2-2 of Figure 1.

Figure 3 is an enlarged perspective of a portion of the clip shown in Figure 1.

Figure 4 is a fragmentary section taken along the line 4-4 of Figure 1.

Figure 5 is a front elevation of a clip having a single pressure tab.

Figure 6 is another embodiment of the invention.

Detailed Description of the Invention

As best shown in Figure 5, the clip 10 has a flat body 12 having a central pressure tab 14. The pressure tab 14 is formed in the center of an enlarged relief opening 16. The relief opening is symmetrical and joins narrow pinching channels 18 on either side of the pressure tab.

The pressure tab also has sharp, opposed pressure points 20 that have on one side a hook portion 22. The point and hook portion form part of a bag crease opening 24. The center of the bag crease opening is offset inwardly from the pressure point. Since the pressure point, hook portions, and openings are symmetrical in the clip, only one side is described, it being understood that the bag folded end will be inserted beneath the pressure tab and will be engaged by the pressure points 20 in the pinching channels on either side of the pressure tab.

Figure 1 shows a clip having a flat body 32, a pair of pressure tabs 34 each having a central relief opening 36 joined to pinching channels 38. The central tab has a pair of sharp pressure points 40, each having an adjacent hook portion 42 partially defining a crease opening 44. The center of the crease opening is offset inwardly from the pressure point. In this embodiment, the pressure tabs, pressure points, pinching channels, and relief openings are duplicated at a second location on the body 32 and will apply four pressure points, as at 40, 40a, 40b, and 40c. With four pressure points, the gripping is synthetically improved over merely two pressure points, and the combined four points pro-

vid a total gripping action more than double the gripping of a single pressure tab, as in Figure 5.

Figur 2 shows how the folded end FE of the bag B lies under the pressure tab 34. The width w, shown in Figure 5, for example, must be substantial and approximately equal to or greater than the width t, also shown in Figure 5. These substantial widths provide the pressure tab and the plastic material around the pressure tab with considerable rigidity. This rigidity causes the pressure tab 34 to be very resistant to bending outwardly as the folded end of the bag is slid under the tab. In addition, the crease openings 24 relieve the pressure on the tab caused by the thickness of the crease, again causing the tab to not deflect very much out of the plane of the body 12. The large relief opening 36 at the bottom of the tab provides a substantial opening for allowing the bag to bend and move out from beneath the tab so that, again, not a great amount of bending pressure is applied to flex the tab outwardly.

In contrast to these large relief openings, the pressure points apply their pressure at very narrow channels 18. This enables the pressure points to apply considerable pressure almost at right angles to the face of the folded end of the bag material. The application of these forces at almost right angles causes the pressure points to dig in tightly to keep the clip on the bag.

The offset of the center of the crease openings inwardly from the pressure points allows the bag material to be gathered into the openings and again reduces the amount of pressure trying to push the stiff pressure tab out of the plane of the body.

Figure 6 illustrates an embodiment in which two sets of pressure points 60 and 61 are provided at each pinching channel 68.

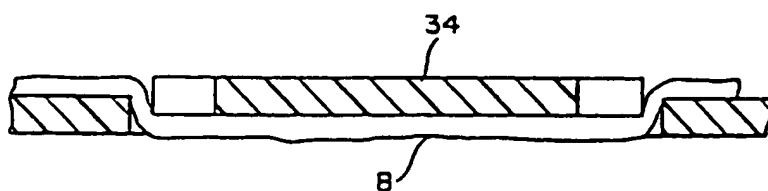
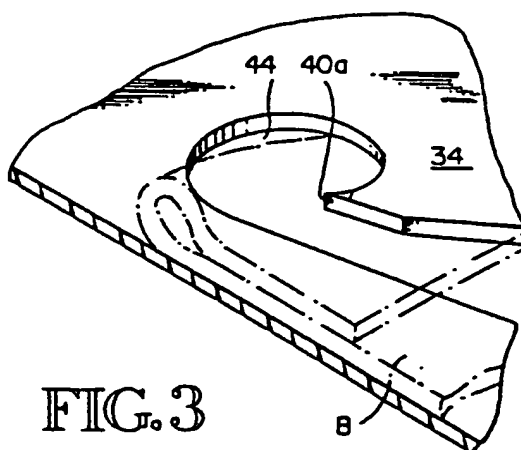
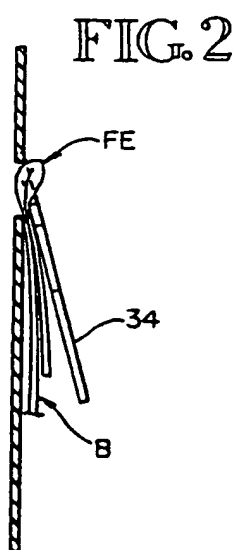
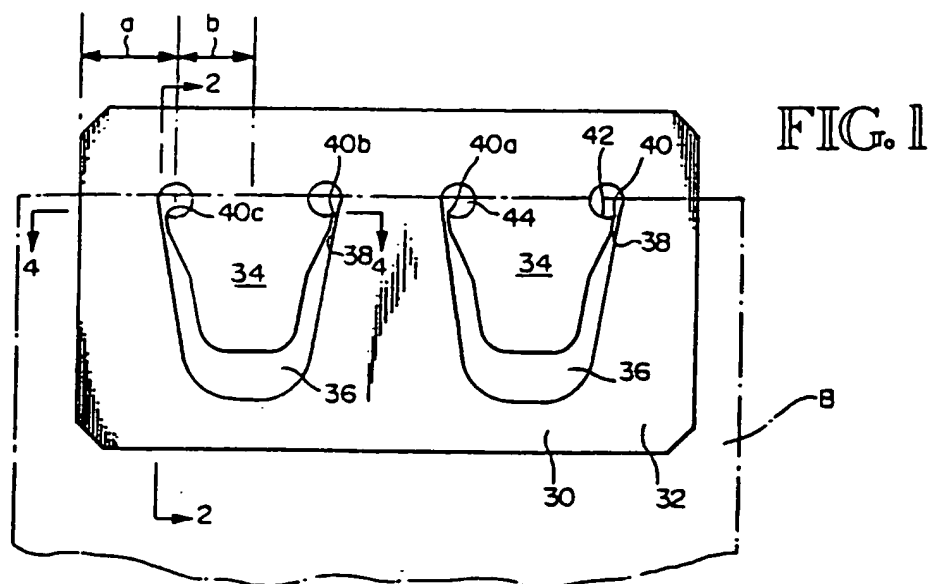
While the preferred form of the invention has been illustrated and described, it should be apparent that variations will be apparent to one of ordinary skill in the art. Accordingly, the invention is not to be limited to the specific embodiment shown in the drawings.

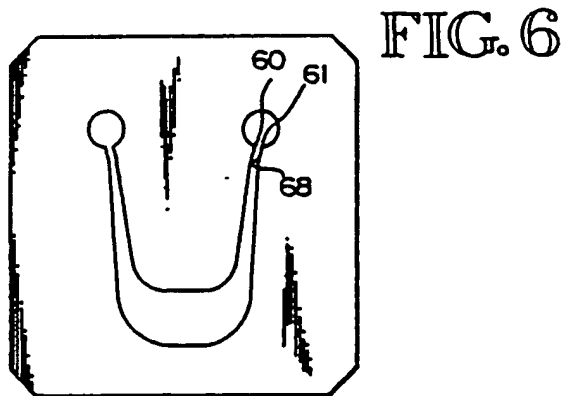
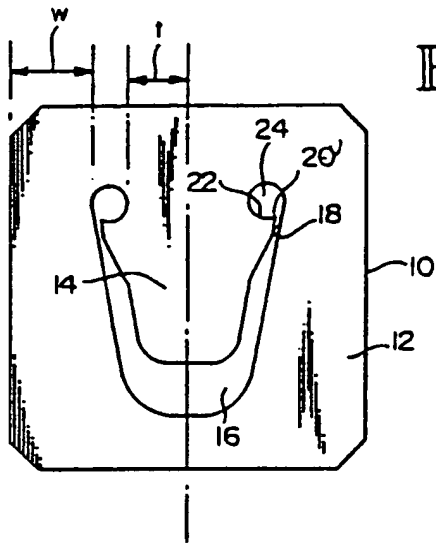
Claims

1. A clip for holding closed a folded end of a flexible bag, comprising:
 - a plastic body,
 - said body having a central pressure tab in an enlarged relief opening; and
 - means on said tab for applying pressure at transversely spaced locations on either side of said pressure tab,
 - further characterized in that said means for applying pressure including sharp pressure points directed toward channels of reduced

width wherein the folded end of the bag is gripped at two points on opposite sides of said pressure tab within said reduced width channels, said channels having a most narrow width in an area opposite the pressure points and an area of larger width beyond and adjacent the pressure points toward the free end of the pressure tab so as to provide a relief area for receiving the bag, said means for applying pressure including bag crease-receiving openings spaced above said pressure points, each said bag crease-receiving opening defining a hook surface terminating upwardly at said sharp pressure point located above the hook surface.

2. The clip of claim 1, further characterized in that said flat plastic body having front and rear surfaces when in an undeflected condition having each such front and rear surface in a single flat plane, said pressure tab in an undeflected condition being uniformly flat across its width from one pressure point to the other so that the pressure points lie in the same plane as the remainder of the plastic body.
3. The clip of claim 1, further characterized in that each said pressure point and pinching channel offset laterally outwardly from the center line of the adjacent bag crease openings.
4. The clip of claim 1, further characterized in that said body including a second central pressure tab, and means on said second pressure tab for applying pressure at transversely spaced locations on either side of said second pressure tab, said means for applying pressure including pressure points directed outwardly toward pinching channels of reduced width wherein the folded end of the bag is gripped at four points, two sets of points on opposite sides of each of said first and second pressure tabs.







European Patent
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EUROPEAN SEARCH REPORT

Application Number

EP 92 11 2011

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	US-A-3 131 445 (LORBER) * column 1, line 9 - line 10 * * column 1, line 41 - line 51; figure 1 * ---	1	B65D33/16 B42F1/10
A	DE-U-8 609 922 (KOLLOCH) * page 13, line 8; figure 6 * -----	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B65D B42F
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 20 OCTOBER 1992	Examiner SPETTEL J.D.M.L.
CATEGORY OF CITED DOCUMENTS			
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